



MAIL STOP APPEAL BRIEF-PATENTS  
PATENT  
8017-1141

IN THE U.S. PATENT AND TRADEMARK OFFICE BEFORE  
THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of Appeal No.

Hiroshi KANETA et al. Conf. 7384

Application No. 10/505,417 . . . . Group 1795

Filed August 24, 2004 Examiner C. Lee

SECONDARY BATTERY HAVING THIRD TERMINAL IN ADDITION TO POSITIVE AND NEGATIVE ELECTRODE TERMINALS AND STORAGE BATTERY USING THE SAME

## **APPEAL BRIEF**

MAY IT PLEASE YOUR HONORS:

### 1. Real Party in Interest

The real party in interest in this appeal is the current assignee, NEC Corporation of Tokyo, Japan.

## 2. Related Appeals and Interferences

None.

### 3. Status of Claims

Claims 2-3, 5-8, and 11-21 were rejected and are the subject of the present appeal. Claims 1, 4, and 9-10 have been canceled.

#### 4. Status of Amendments

No amendments were filed following the Final rejection of April 8, 2008.

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5. Summary of Claimed Subject Matter

Claim 21 is the only independent claim. The dependent claims are not argued separately.

Claim 21 defines a flat secondary battery. A secondary battery is an elemental cell in a larger storage battery (page 1, lines 22-23).

The secondary battery of claim 21 includes an electric-power generating element (element 8, Figure 4) provided with positive and negative electrode collectors (elements 2a and 3a, Figure 4), each of the collectors having a respective uncoated area that is free of active material (Figure 4; page 7, lines 8-11). Positive and negative electrode terminals (elements 2 and 3, Figure 4) for charge and discharge are attached to the uncoated areas of the positive and negative electrode collectors, respectively (page 7, lines 8-11). A third terminal (element 4, Figure 4) is attached directly to the uncoated area of one of the positive and negative electrode collectors and does not directly contact either of the positive and negative electrode terminals (page 7, lines 12-18, and Figure 4). The third terminal and a respective one of the positive and negative electrode terminals are attached to the uncoated area of the one of the positive and negative electrode collectors at different positions in order to avoid an influence on the third terminal of heat from the respective one of the positive and negative electrode terminals (page 7, lines 17-21). The third terminal has a same electric

potential as the respective one of the positive and negative electrode terminals (page 4, lines 14-15) and the third terminal is attached electrically conductively to the uncoated area of the one of the positive and negative electrode collectors (page 8, line 26 through page 9, line 8).

The addition of the third terminal improves the accuracy in the measurement of the temperature rise in the secondary battery caused by a rapid charge/discharge of the battery (page 4, lines 2-13).

6. Grounds of Rejection to be Reviewed on Appeal

Whether claims 2-3, 5-8, and 11-21 are unpatentable under 35 U.S.C. 103(a) over YANAI et al. 6,458,485 in view of MCMAHAN et al. 6,002,240 and SHIBUYA 2002/0034678.

7. Argument

Rejection under 35 U.S.C. 103(a) over YANAI et al. in view of MCMAHAN et al. and SHIBUYA

Claims 2-3, 5-8, and 11-21

YANAI et al. disclose a secondary cell that includes a positive temperature coefficient of resistance element (PTC) 5 that joins two parts of the collector 42 (Figure 1, column 2, lines 38-46). As explained at column 2, lines 13-21, the PTC element operates so that when a current in excess of a predetermined value flow therethrough, the resistance rapidly

increases to suppress the current. This means that when the cell develops a short circuit, a current exceeding the predetermined value will not flow continuously. As is apparent from this explanation, the PTC element has a non-linear response to current. This non-linear response is suited to the purpose in YANAI et al. because the PTC limits current at a predetermined value; the linearity of the response before and after the predetermined value does not matter to operation of the device in YANAI et al.

However, the non-linear response of the PTC in YANAI et al. would not be suitable for measuring temperature with a controller as discussed in MCMAHAN et al. because it would give the temperature at only one current reading, whereas MCMAHAN et al. desire the controller to determine temperature over a range of resistances (column 4, line 33 through column 5, line 11). In other words, the non-linear PTC in YANAI et al. would not be suitable for the purpose of temperature measurement as in MCMAHAN et al. and one of skill in the art would not attach a controller as in MCMAHAN et al. to the PTC in YANAI et al. Accordingly, the claims avoid the rejection under §103.

Even if one of skill in the art did combine the references, the references do not disclose all of the limitations of claim 21. Claim 21 provides that the positive and negative electrode terminals for charge and discharge are attached to respective uncoated areas of the collectors, and that the third terminal is

attached directly to "said uncoated area." In YANAI et al., the positive/negative terminals 3 are attached to different uncoated areas than are the PTC elements 5. They are not attached directed to "said uncoated area" (i.e., the same uncoated area) to which the positive/negative terminal is attached. There is no suggestion in the combination to attach the third terminal to "said uncoated area" as claimed and thus the combination lacks this feature. Thus, the claims avoid the rejection under §103 for this further reason.

Claims 2-3, 5-8, and 11-20 depend from claim 21 and are allowable for the same reasons.

In view of this, it is believed that the rejections of record cannot be sustained and that the same must be reversed and such is respectfully requested.

The claims involved in the appeal are set forth in the Claims Appendix.

There are no copies of evidence in the Evidence Appendix.

There are no copies of decisions in the Related Proceedings Appendix.

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Respectfully submitted,

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8. Claims Appendix

The claims on appeal:

1. (canceled)
2. A flat secondary battery according to claim 21, wherein said third terminal is formed to extend in the direction differing from the extending direction of said positive and negative electrode terminals for charge and discharge.
3. A flat secondary battery according to claim 2, wherein the direction in which said third terminal extends is perpendicular to said extending direction of said positive and negative electrode terminals for charge and discharge.
4. (canceled)
5. A flat secondary battery according to claim 21, wherein said third terminal is connected to a control circuit.
6. A flat secondary battery according to claim 21, wherein said electric-power generating element is made up of anode elements and cathode elements alternately stacked with a separator sandwiched between each anode element and each cathode element.
7. A flat secondary battery according to claim 21, provided with a casing of a laminate film.
8. A storage battery of a serial type using a plurality of flat secondary batteries according to claim 21.
- 9-10. (canceled)

11. A flat secondary battery according to claim 2, wherein said third terminal is connected to a control circuit.

12. A flat secondary battery according to claim 3, wherein said third terminal is connected to a control circuit.

13. A flat secondary battery according to claim 2, wherein said electric-power generating element is made up of anode elements and cathode elements alternately stacked with a separator sandwiched between each anode element and each cathode element.

14. A flat secondary battery according to claim 3, wherein said electric-power generating element is made up of anode elements and cathode elements alternately stacked with a separator sandwiched between each anode element and each cathode element.

15. A flat secondary battery according to claim 21, wherein said third terminal is attached directly to said uncoated area of said one of said positive and negative electrode collectors at a position that is opposite and remote from a position where the respective one of said positive and negative electrode terminals for charge and discharge is attached to said uncoated area of said one of said positive and negative electrode collectors.

16. A flat secondary battery according to claim 7, wherein said third terminal is attached to said one of said positive and negative electrode collectors inside said casing.

17. A flat secondary battery according to claim 21, further comprising an outer member that forms a body of the battery and wherein said third terminal is attached to said one of said positive and negative electrode collectors inside said outer member.

18. A flat secondary battery according to claim 21, comprising two of said third terminal that are each attached to a respective one of said positive and negative electrode collectors.

19. A flat secondary battery according to claim 18, further comprising a control system, and wherein said two third terminals are connected to said control system.

20. A storage battery comprising a plurality of said flat secondary battery of claim 18, wherein said positive and negative electrode terminals are directly connected serially to each other, and further comprising a control system to which said third terminals of the plurality of said flat secondary batteries are connected.

21. A flat secondary battery comprising:  
an electric-power generating element provided with positive and negative electrode collectors, each of said collectors having a respective uncoated area that is free of active material;  
positive and negative electrode terminals for charge and discharge and that are attached to said uncoated areas of said positive and negative electrode collectors, respectively; and

a third terminal that is attached directly to said uncoated area of one of said positive and negative electrode collectors and that does not directly contact either of said positive and negative electrode terminals,

wherein said third terminal and a respective one of said positive and negative electrode terminals are attached to said uncoated area of said one of said positive and negative electrode collectors at different positions in order to avoid an influence on said third terminal of heat from the respective one of said positive and negative electrode terminals, and

wherein said third terminal has a same electric potential as said respective one of said positive and negative electrode terminals and said third terminal is attached electrically conductively to said uncoated area of said one of said positive and negative electrode collectors.

9. Evidence Appendix

None

10. Related Proceedings Appendix

None